INTERNSHIP PROJECT DOCUMENTATION

HOTEL ROOM PRICE PREDICTION

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Objectives:

1. Forecast demand for hostel rooms to ensure optimal pricing and maximize revenue.
2. Determine the factors that influence room prices, such as occupancy rates, seasonality, and local events.
3. Develop predictive models that accurately predict room prices based on historical data and current market trends.
4. Monitor market trends and adjust prices in real-time to respond to changes in demand.
5. Optimizing pricing strategies to improve profit margins and attract more customers.

Overall, the goal of hotel room price prediction is to help hotels and other accommodation providers make informed pricing decisions that drive revenue and improve their bottom line.

Hotel performance metrics such as

average daily rate and occupancy rate are two of the most prominent metrics for the industry. The

authors’ research group works on developing methods for estimating tourism metrics based on

digital footprint. Data available publicly on the Internet, including hotel room prices, are collected

daily. This article shows that the prices offered online have a high positive correlation with those

reported by official statistics at the Nomenclature of Units for Territorial Statistics 2 level after the

online prices have been preprocessed and, thus, the relevance of this data source is established.

This article then presents a model for explaining and predicting mean hotel occupancy rates by

destination based on these prices. The results are very promising, the fit is excellent and the

predictions are also good. In summary, prices have moved from reflecting the expected demand to

reflecting the actual demand and occupancy rat

Historical Context:

The prediction of room rates in the hospitality industry has a long history, dating back to the early days of the industry when innkeepers and hoteliers would try to estimate the demand for their rooms and adjust their prices accordingly. With the advent technology, the process of room rates prediction has become more sophisticated, with the use of data analysis, machine learning and artificial intelligence to make more accurate predictions. Today, room rate prediction is a critical aspect of revenue management for hotels and other hospitality businesses, as it allows them to optimize their pricing strategies to maximize revenue and stay competitive in an ever-changing market.

Life cycle of a project:

Life cycle of a project basically it participates in several stages to finish the task.

1. Problem definition
2. Data collection and preparation
3. Model selection
4. Model training
5. Model deployment
6. Model evaluation
7. Continuous monitoring and improvement

The life cycle of a project for hotel room price prediction involves the following steps:

1.Problem definition:

The first step is to clearly define the problem and determine what the project is trying to achieve. This could involve identifying the specific business objective and determining the metrics that will be used to evaluate the success of the project.

2.Data Collection and preparation:

This involves gathering data related to the hotel, its rooms, and the local market. This data is then cleaned, processed, and transformed into a format that can be used for analysis.

3.Model selection:

The next step is to select the appropriate machine learning or artificial intelligence model that will be used to make the predictions. This decision will be based on the data and the specific problem being solved.

4.Model training:

The selected model is then trained using the data and fine-tuned to make predictions that are as accurate as possible.

5.Model deployment:

The trained model is then deployed in a production environment, where it can be used to make real-time predictions.

6. Model evaluation:

The final step is to evaluate the performance of the model and make any necessary improvements. This can involve comparing the model’s predictions to actual room rates and determining any areas for improvement

7.Continuous monitoring and improvement:

The process does not end here. The model and its predictions should ne continuously monitored and refined over time to maintain its accuracy and effectiveness.